# Chemical & Engineering NEWS

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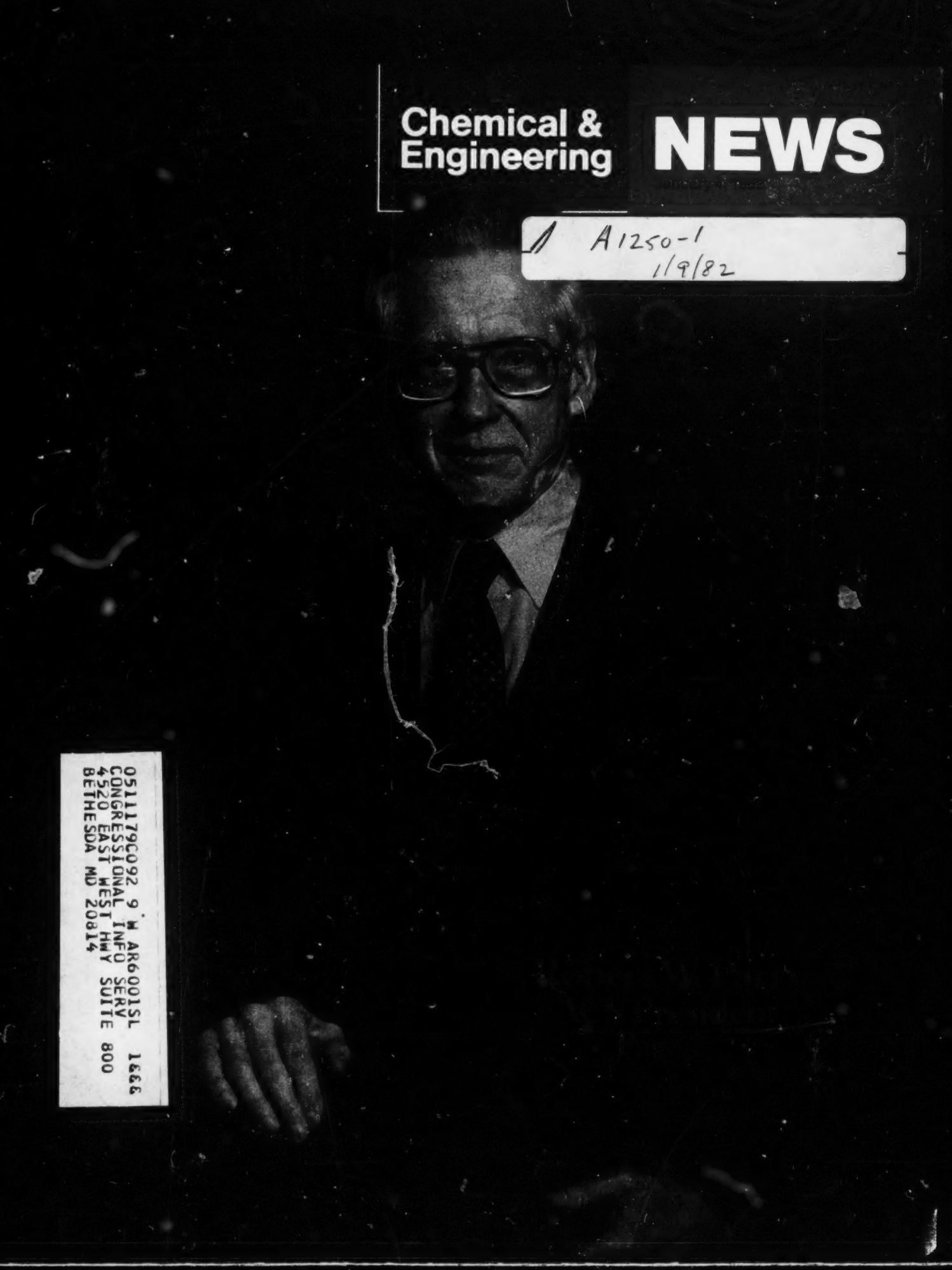

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## News of the Week

- ***U.S. spending for R&D*** *will hit $77.6 billion in 1982, Battelle Columbus economists say, a 12.4% rise from 1981, but most of the increase is absorbed by inflation.* ***Page 6***
- ***Henry Eyring,*** *distinguished physical chemist and former president of ACS and of AAAS, is dead at age 80.* ***Page 6***
- ***Imposing a stricter particulate emission standard*** *for lightweight diesel cars is inadvisable now, NAS panel tells Environmental Protection Agency.* ***Page 7***
- ***Richard M. Lemmon has been re-elected*** *director of the society's Region VI in a rerun of balloting.* ***Page 7***

## News Focus

- ***Science adviser George Keyworth,*** *in a C&EN interview, reveals goals for reshaping U.S. science policy, touching on the tender area of research and development.* ***Page 8***

## Business

- ***Pension plans for U.S. chemical firms*** *continue to contribute more funding and better financing than those of manufacturing companies.* ***Page 14***

## International

- ***Computerized data-base service on chemical trade*** *gives on-line or printed statistics on some 1600 chemical products for major Western Europe trading partners as well as the U.S. and Japan.* ***Page 15***

## Government

- ***Barring Congressional intervention, DOE faces the ax*** *under the President's plan to make government more efficient; most of the agency's duties likely will be taken up by Commerce.* ***Page 17***

## Science

- ***Structure of palytoxin,*** *deadly poison from tropical sea animals with a chemical formula of $C_{129}H_{223}N_3O_{54}$ and a molecular weight of almost 2700, is being uncovered through NMR and x-ray methods.* ***Page 19***

## Technology

- ***Deposits of massive metallic sulfides*** *in active rifts in the ocean floor near the West Coast attract prospectors for the strategically short minerals.* ***Page 21***

# BATTELLE PREDICTS 12% HIKE IN R&D FUNDING

Expenditures for research and development in the U.S. will reach $77.6 billion in 1982, Battelle Columbus Laboratories says in its annual R&D forecast. According to Battelle economists Jules J. Duga and W. Halder Fisher, that amount represents a 12.4% increase from the $69.1 billion that the National Science Foundation estimates actually was to be spent for R&D in 1981.

Most of the increase will be absorbed by inflation, which Battelle estimates at 8.7% (for R&D) in 1982. The real increase thus would be 3.7%, slightly higher than the average annual 3.4% increase for the past eight years.

For a change, industry R&D funding will exceed government support. Industry is expected to provide $37.7 billion, an increase of 14.8% from 1981 and 48.6% of total R&D funding. The federal government is expected to provide $37.0 billion, a 13.3% increase and 47.7% of the total. The rest will come from academic institutions ($1.7 billion, 2.2% of the total) and other nonprofit organizations ($1.1 billion, 1.5% of the total).

Industry will continue to do most of the work. In 1982, Battelle says, performance of R&D by industry is expected to rise to $55.0 billion, or 70.8% of the total. In-house federal research will amount to $10.1 billiion (13.0%). R&D by academic institutions will account for $9.7 billion (12.5%); by other nonprofit organizations, for $2.8 billion (3.6%).

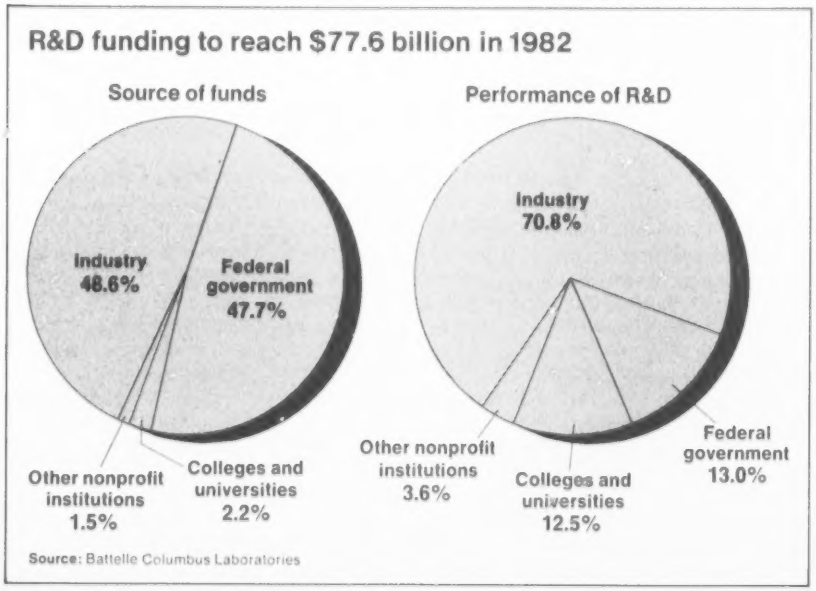
Battelle notes that federal funds support R&D performance in all four sectors. About 25% goes for in-house work; almost 50% goes to industry; about 20% goes to colleges and universities; and the remainder, about 5%, goes to other nonprofit organizations. In 1982, four government agencies will account for 87.9% of total federal R&D funding.

"National security, reflected in the Department of Defense budget, is the dominant driving force in furthering R&D spending," Battelle says. DOD is expected to account for 57.0% of the federal total, compared to about 45% in 1981. The National Aeronautics & Space Administration will account for 13.6% of the federal total, and the Department of Health & Human Services for 9.9%. The Department of Energy will account for only 7.4% of the total—a sharp drop from 1981's 15%.

R&D will be heavily self-funded in the manufacturing agencies, Battelle says, with, on average, only 31.8% of the $53.0 billion total coming from the federal government. Aerospace, the largest single sector, is a notable exception; the government is expected to provide 74.0% of the $12.2 billion total.

Runnerup is the electrical machinery and communications industry, with an expected total of nearly $11 billion, 41.4% federally funded. Other major sectors include machinery ($7.6 billion, 12.7% federally funded), autos and other transportation ($6.5 billion, 13.9%), and chemicals ($5.7 billion, 8.3%).

Battelle anticipates that the Administration's attitude toward business may continue to provide an atmosphere conducive to industrial R&D, with particular effort directed toward "improved competitive position vis-a-vis foreign competition." New tax credits for increases in industrial R&D also are expected to have "some small impact." □




## Henry Eyring dead at 80

Henry Eyring, the Mexican-born "cowpoke" whose talent for theory and experimentation helped elevate him to preeminence in physical chemistry, died of cancer-related illness the day after Christmas at the age of 80. He had been Distinguished Professor of Chemistry and Metallurgy at the University of Utah, Salt Lake City, since 1966.

Eyring, president of the American Chemical Society in 1963 and of the American Association for the Advancement of Science in 1965, was much admired and honored for his fundamental contributions to physical chemistry. Among his most important accomplishments are the theory of absolute reaction rate (a method used to predict theoretically the rate of chemical reactions) and the concept of the activated complex.

In more than 600 scientific papers, he described the fruits of his wide-ranging investigations in reaction kinetics, quantum chemistry, theory of liquids, optical rotation, molecular biology, aging and cancer, anesthesiology, and other areas.

Eyring's achievements were recognized with a string of honorary degrees and prestigious awards, including the Priestley and Gibbs medals and the National Medal of Science, the highest honor the U.S. can bestow on a scientist.

Born in Chihuahua, Mexico, to a well-to-do rancher, Eyring studied

# NOTE

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